

Abstract

PEM Fuel Cell Stack Assembly With  
Isolated Internal Coolant Manifold

A PEM fuel cell assembly includes cooler plates (10) with internal coolant manifolds (25) isolated from the cell stack assembly by an isolation gap (28) to minimize the risk of contamination of the cells by antifreeze. The internal coolant manifolds are formed by seal assemblies (24), each disposed between inlet or outlet openings (14, 15) in projections (16) of each cooler plate extending outwardly from the fuel cell planform (20) to provide a gap (28), which may be used as an air turn manifold. Flanges (40) with through holes (41) may receive tie rods to assist assembly of a fuel cell stack with the cooler plate.